

The Indigenous Voice Referendum

Understanding Voter Demographic

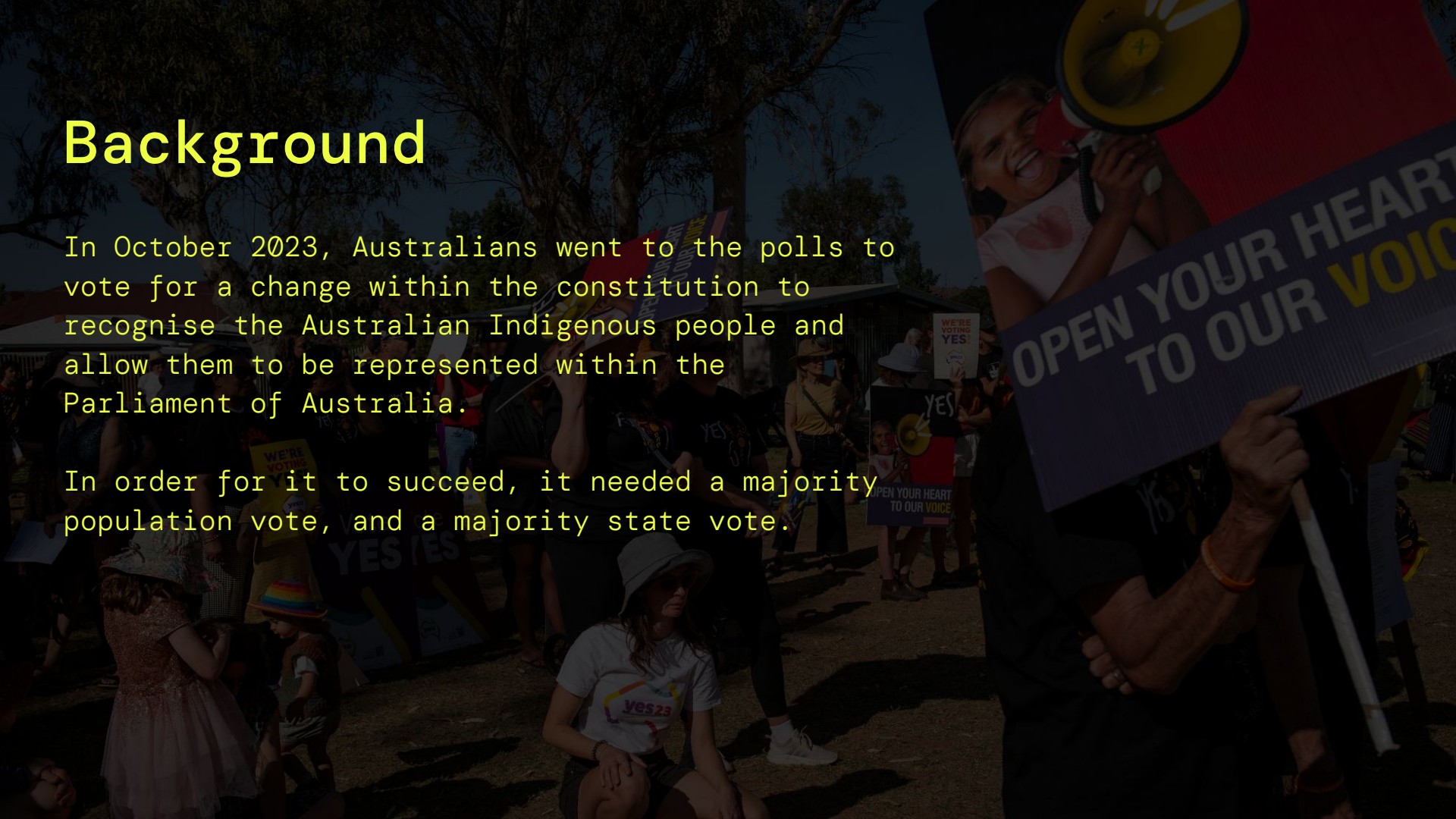


Ironhack MidProject by Ray Pham

Background

In October 2023, Australians went to the polls to vote for a change within the constitution to recognise the Australian Indigenous people and allow them to be represented within the Parliament of Australia.

In order for it to succeed, it needed a majority population vote, and a majority state vote.



Background

It failed on both counts with the population vote being **39.94%** Yes Votes and **60.06%** No Votes.

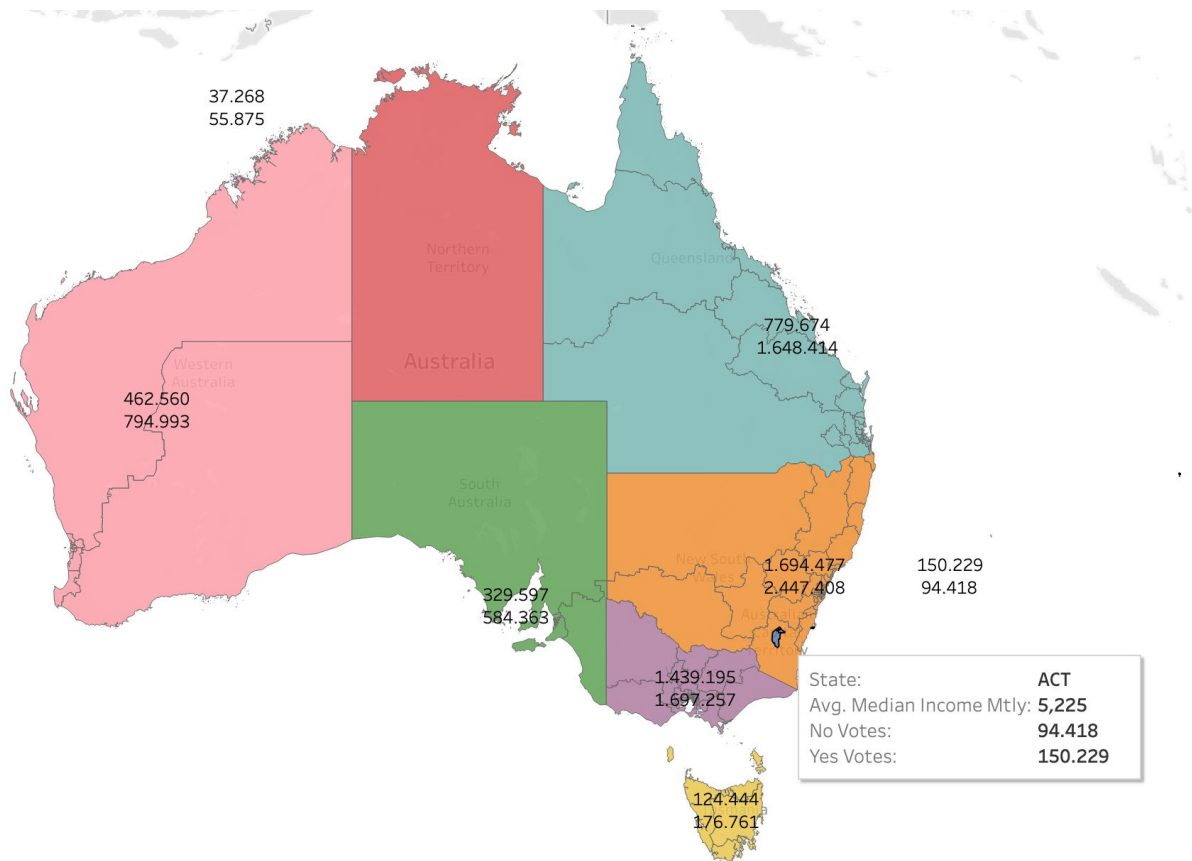
Only one state (Australian Capital Territory) had the majority with **61.29%** Yes votes.



The Australian Overview

All states voted majority NO with the only state ACT (where the capital Canberra is in) who voted a majority yes.

Total votes counted:
15,895,231



The Approach

The dataset provided by the Australian Electoral Commission didn't provide any specific demographic profiles for the people who voted, rather only by electoral area.

There was a census survey conducted across Australia in 2021, which mapped out key demographic attributes in via electoral areas.

These demographic attributes included age, gender, indigenous population, education, job sector, religious affiliations and housing situation (income, rent etc).

Objectives

1. Understand the overall demographic of how people voted across the states.
2. Dive into the voter landscape in Sydney.
3. Identify key attributes between different areas within Sydney and if they could have had influence on votes.

Note:

1. The census data grouped the demographic in age groups, which I have selected the age group eligible to vote (20 years above).
2. There were certain electoral areas which were not represented in the census data (eg. military zones), these were omitted.
3. The consolidated data between the census and the referendum in regards to total votes did not correspond to total population. I used it as a representation of influence between demographic areas and how it could have impacted votes.

Hypothesis

Despite Australia being a very multicultural country with a diverse demographic, I wanted to understand if the following factors had an impact on the votes:

1. Areas where with a high-percentage born in Australia voted NO.
2. High-percentage of indigenous population more likely to vote NO.
3. Income and Cost of Living had an impact on how people voted.

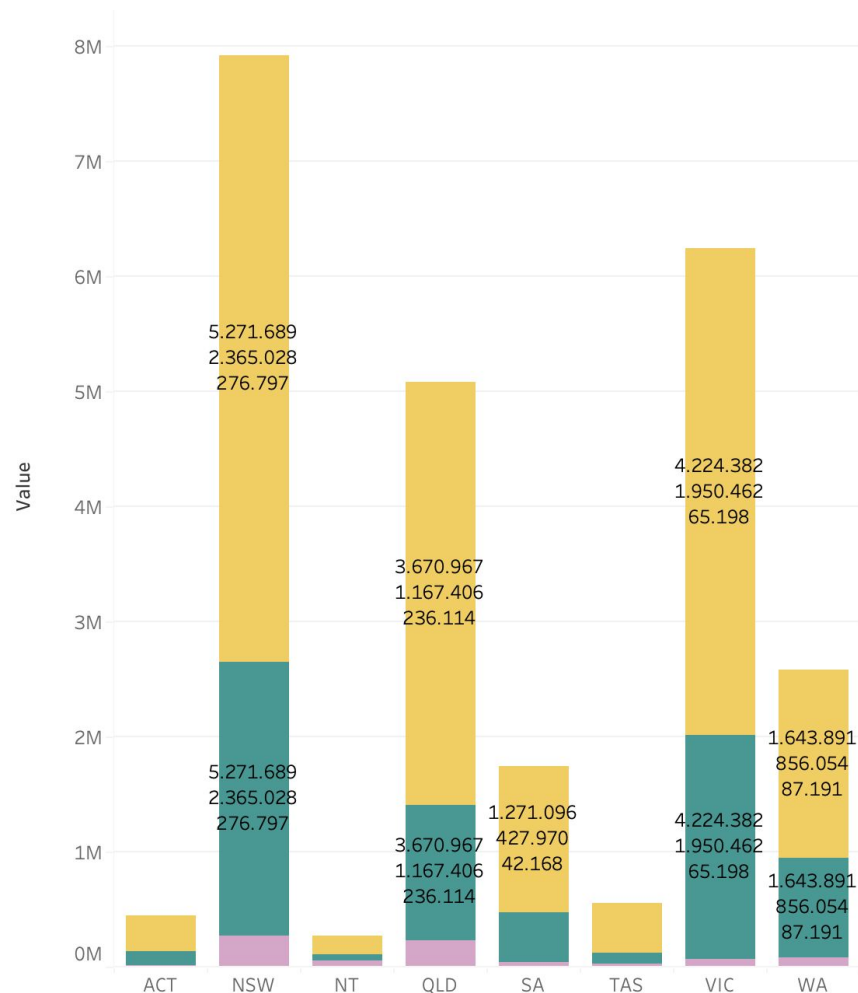
Population Demographic By State

- People born in Australia
- People born Overseas
- People who are Indigenous

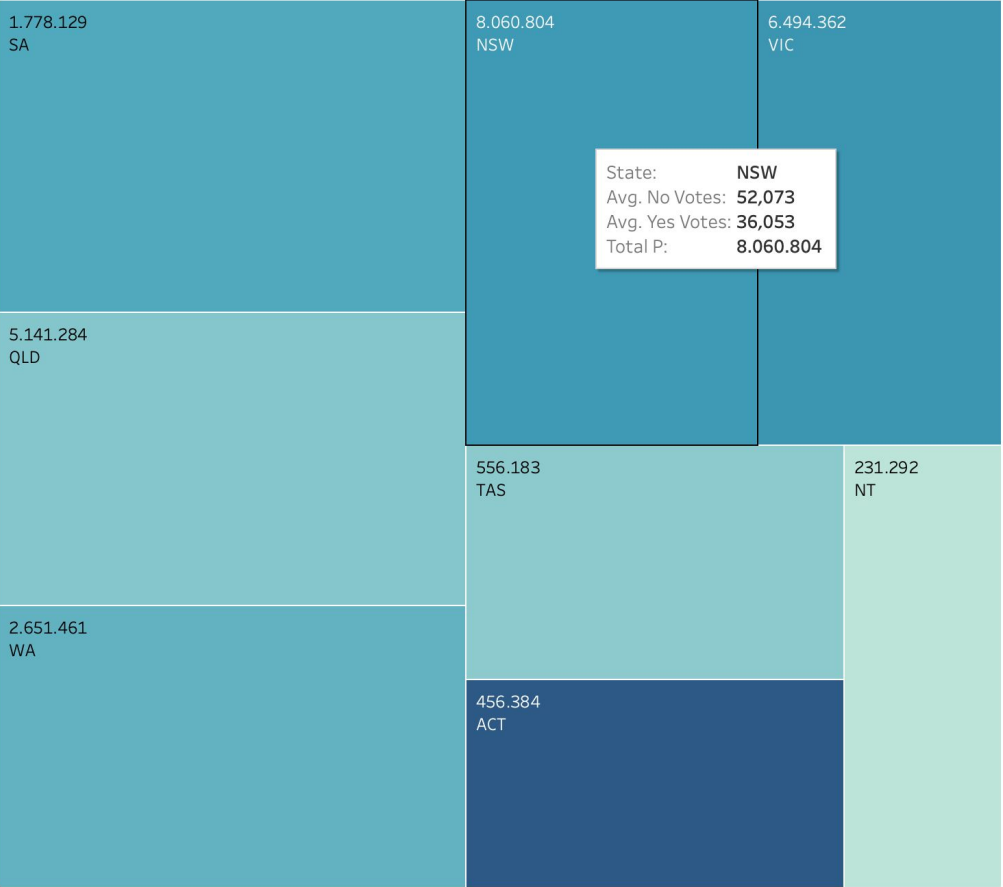
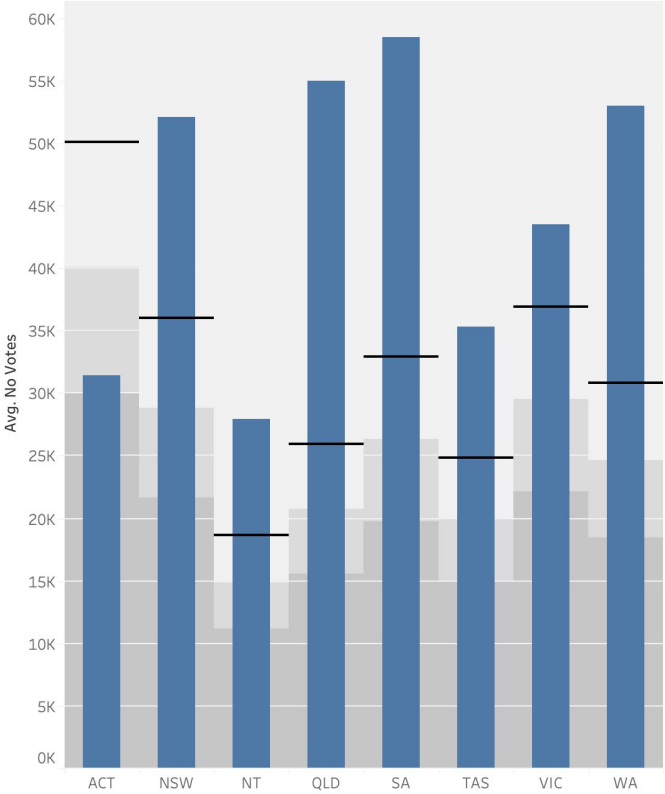
All states have the majority of people born in Australia, with most have a high percentile of the population born overseas.

Indigenous %: 3.3
Australian-Born %: 67.7
Overseas %: 26.96

* Unaccounted: 2.04%



Impact of states by electoral areas who voted YES



Top 10 Yes Votes

State (Top10 Yes Votes.Csv)	Electoral (Top10 Yes Votes.Csv)	Birth Aus (Top10 Yes Votes.Csv)	Birth Oth (Top10 Yes Votes.Csv)	Born Aus Percent (Top10 Yes Vote..)	Total Votes (Top10 Yes Vote..)	Yes Percent	Indigenous Percent (Top10 Y..)
ACT	Canberra	96,554	41,656	70	75,881	71	1
NSW	Grayndler	95,463	48,979	66	82,299	75	1
	Sydney	90,579	99,956	48	77,804	71	1
	Wentworth	84,217	54,825	61	71,716	63	0
VIC	Cooper	101,021	48,652	67	77,708	67	1
	Higgins	98,440	50,446	66	72,503	62	0
	Kooyong	104,559	54,034	66	79,189	61	0
	Macnamara	95,504	62,953	60	66,832	67	0
	Melbourne	98,288	88,437	53	67,095	79	1
	Wills	98,820	52,799	65	73,454	66	1

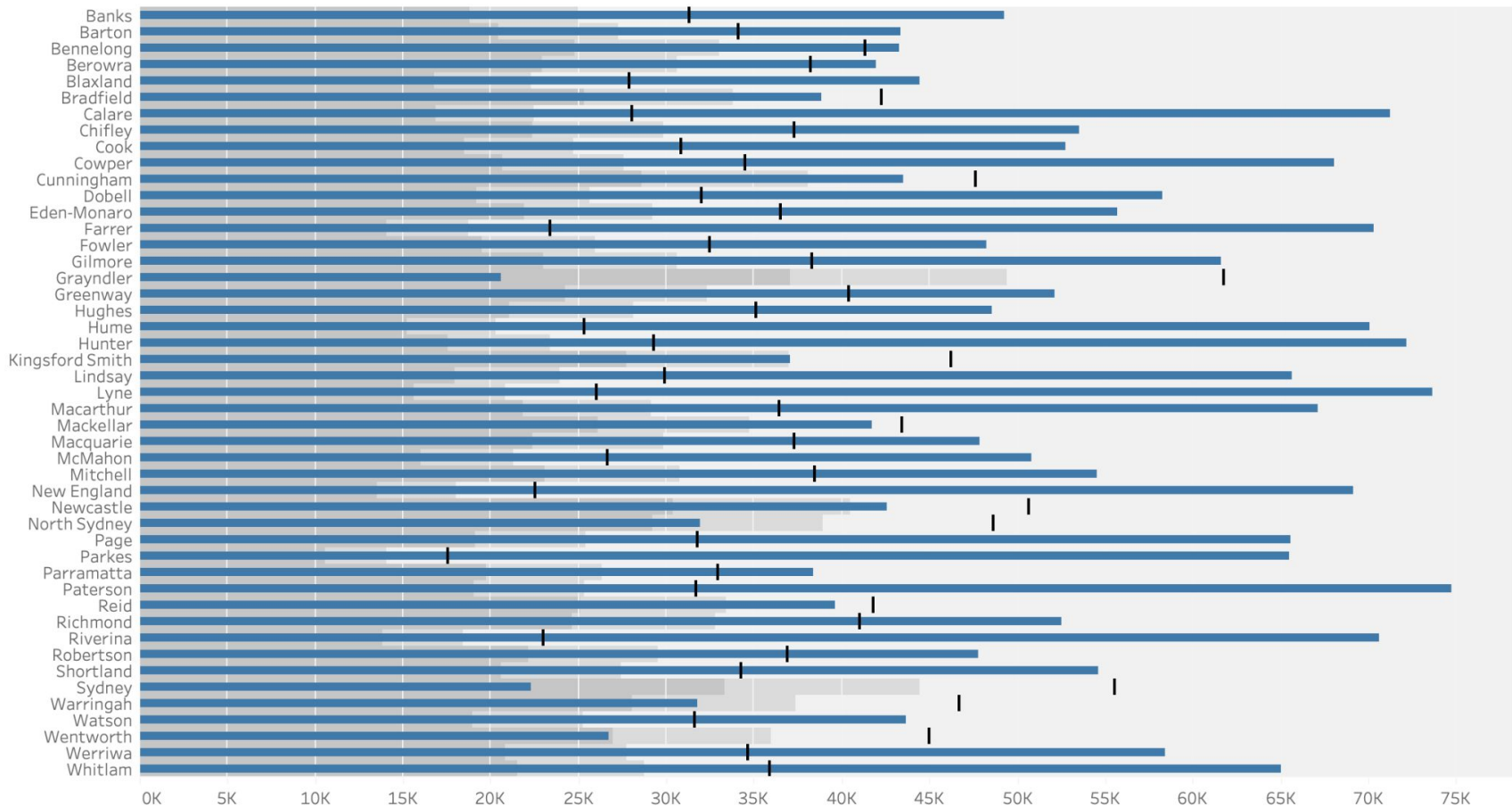
Top 10 No Votes

State (Top10 No Votes.Csv)	Electoral (Top10 No Votes.Csv)	Birth Aus (Top10 No Votes.Csv)	Birth Oth (Top10 No Votes.Csv)	Born Aus Percent	Total Votes (Top10 No Votes.Csv)	No Percent	Indigenous Percent
NSW	Parkes	125,770	10,241	92	83,038	79	16
QLD	Capricornia	127,976	15,727	89	80,951	80	6
	Dawson	125,227	22,774	85	83,620	80	7
	Flynn	126,176	17,666	88	80,043	83	7
	Hinkler	122,891	23,878	84	91,709	81	5
	Kennedy	132,278	21,401	86	84,542	80	15
	Maranoa	123,521	13,038	90	76,648	84	7
SA	Barker	140,683	19,336	88	95,266	78	3
	Grey	140,896	17,254	89	91,993	79	7
VIC	Mallee	135,141	18,348	88	92,092	79	3

Understanding Electoral Data

Reviewing the data based on the top 10 electoral areas between **YES** and **NO** votes, we can see that:

1. The top areas that voted **NO** had a high-percentage of people born in Australia (above 85%) with a higher than average indigenous population (above 5%)
2. The top areas that voted **YES** had an average percentage of people born in Australia (60-70%) with a below average indigenous population (below 1%)
3. The top segments correlates historically to states that with their respective political parties with NSW and VIC being progressive, and QLD more conservative.

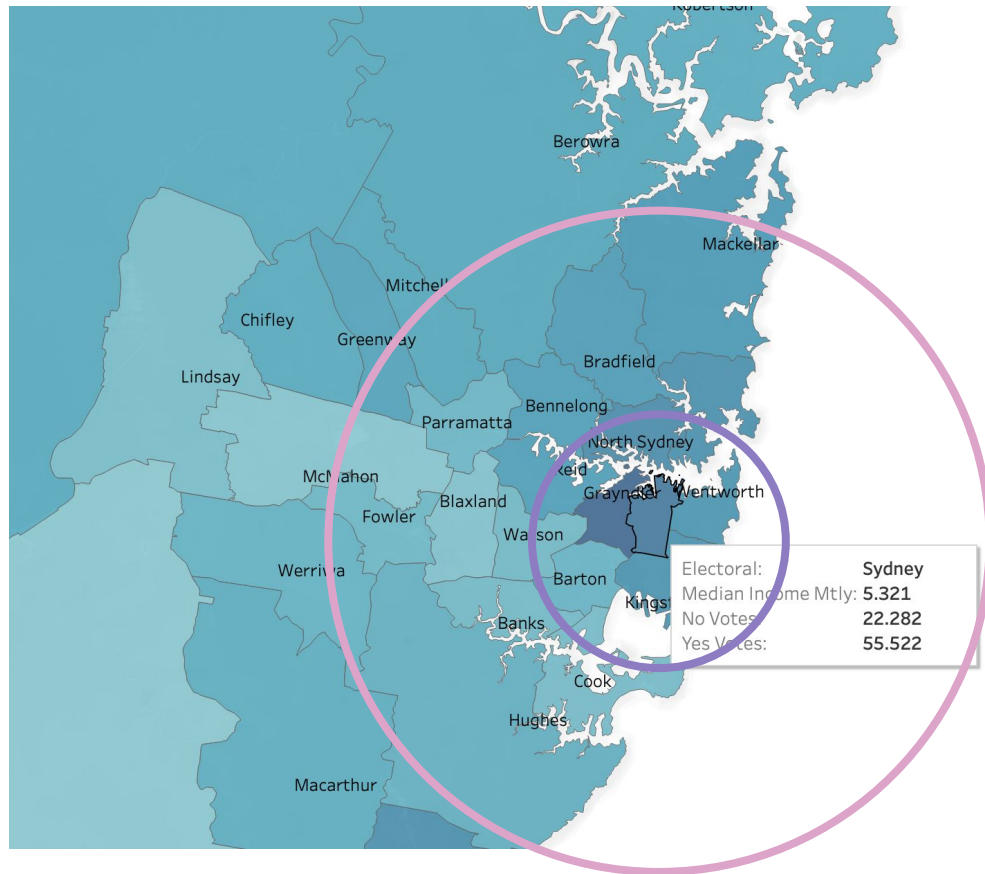


NSW Electoral Map

Diving into Sydney

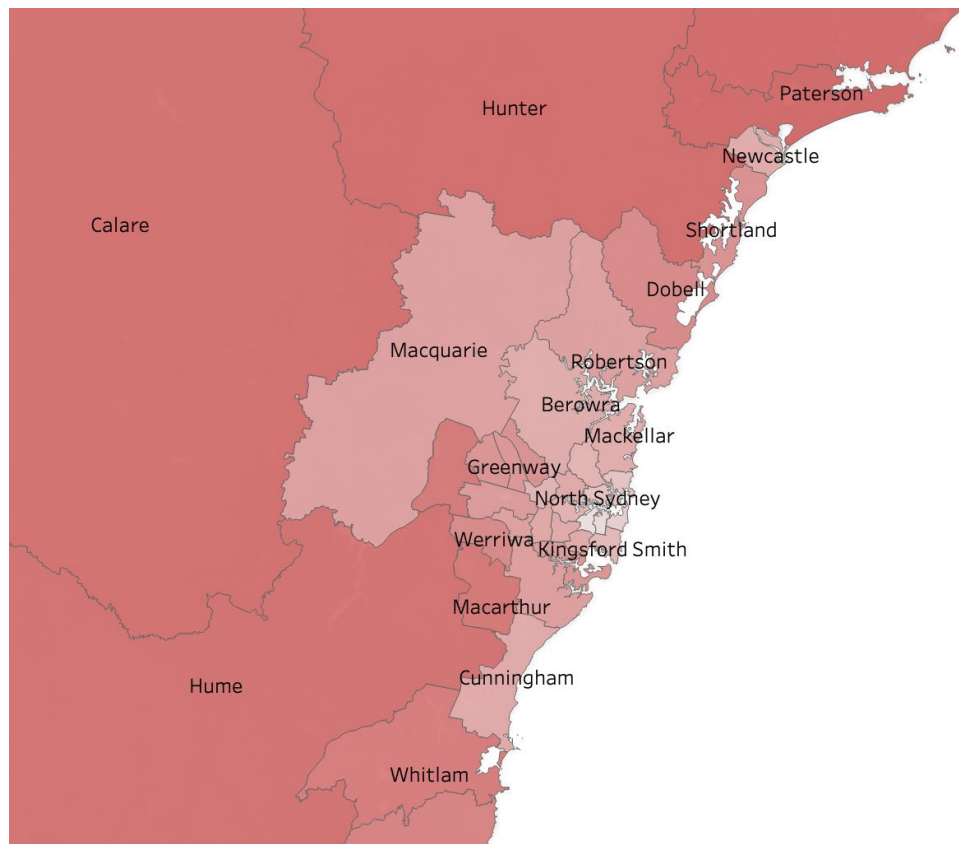
Sydney is comprised of two key areas: **Greater Sydney** and **Metropolitan Sydney**, with an overall population of more than 5.2 million people.

This visualisation indicates the YES voter behaviour, with a higher percentage within the centre of Metropolitan Sydney.



Diving into Sydney

This corresponds to the NO turn out for Greater Sydney, where it has a higher percentile on the overall votes.



Four respective areas were chosen to compare certain factors:

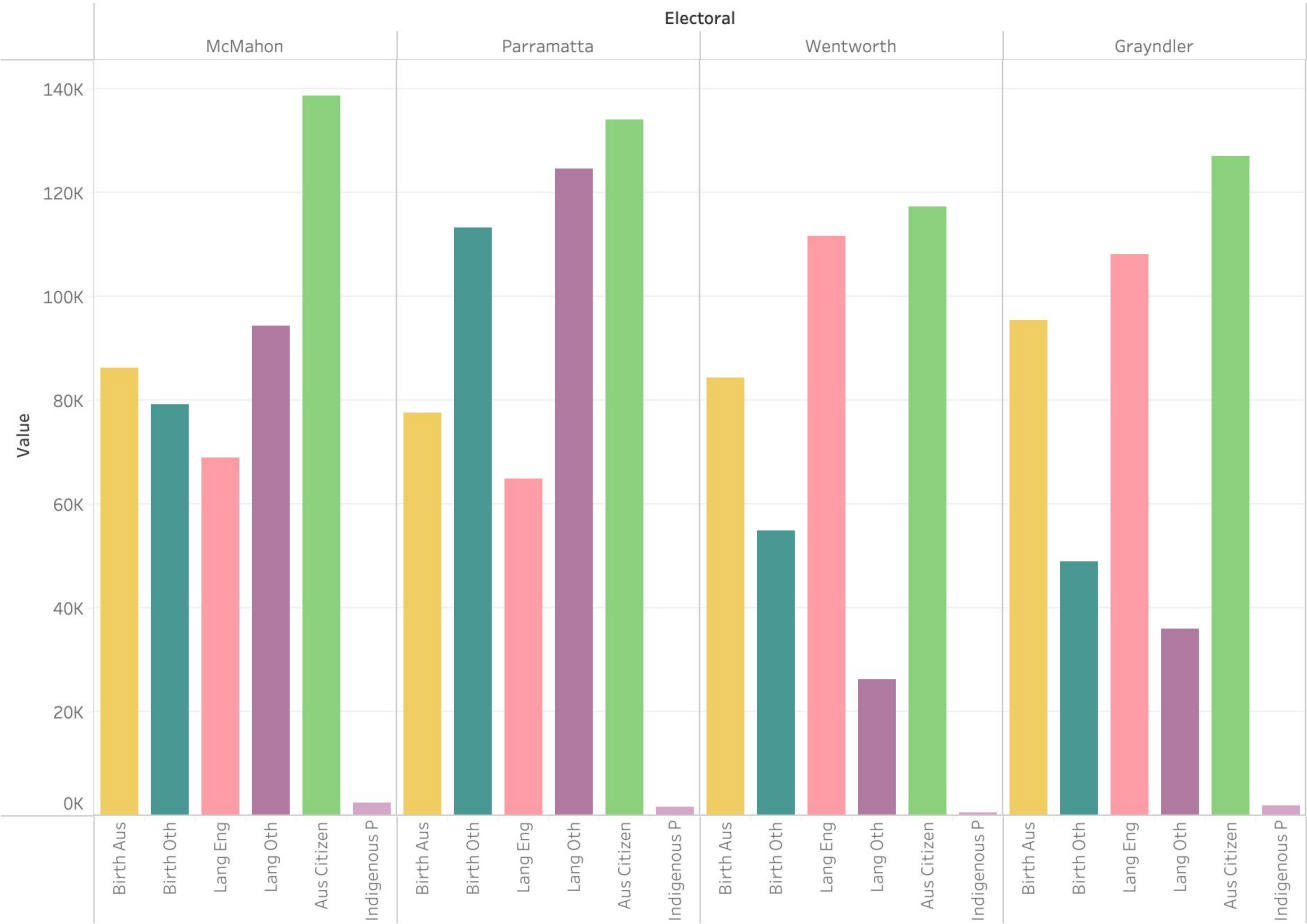
1. McMahon & Parramatta voted NO
2. Wentworth & Grayndler voted YES



* McMahon is my local electoral area. The others have been places I've resided.

Demographic Overview

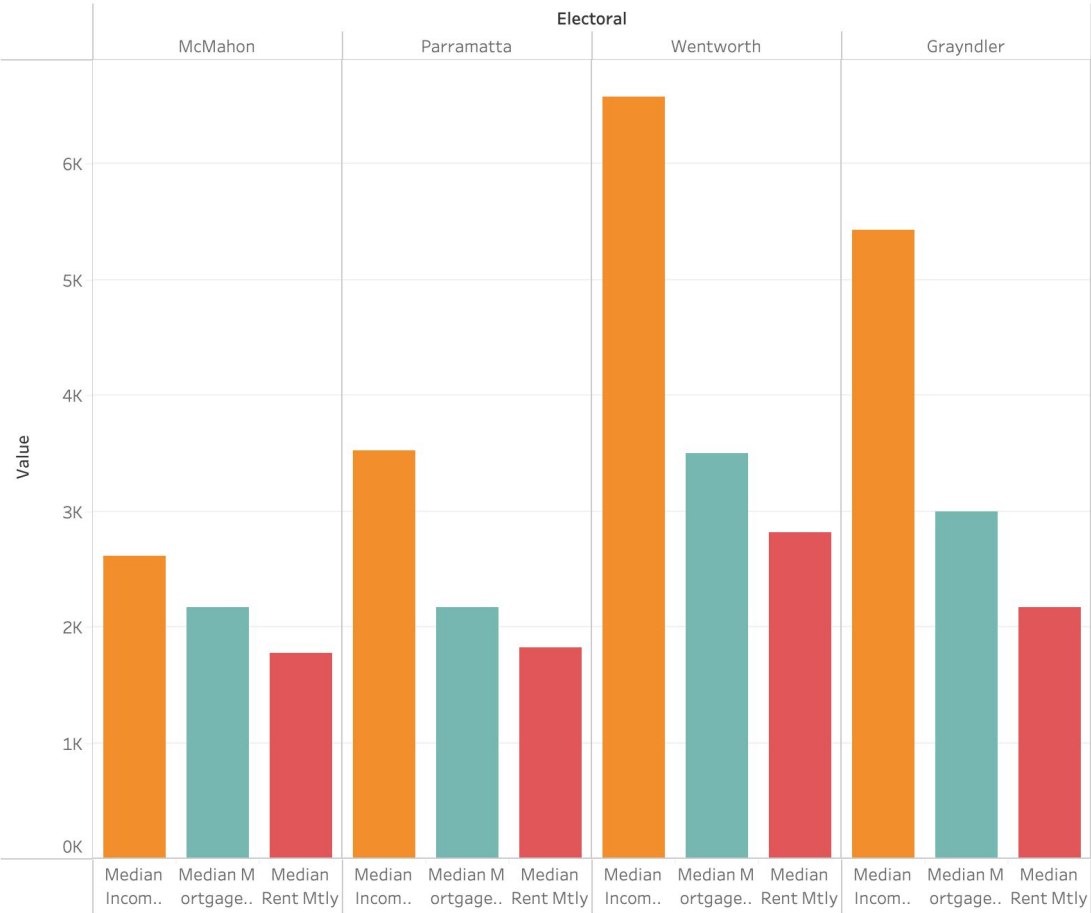
Areas that have a percentage of the population born overseas and higher count of other languages voted NO.



Cost of Living

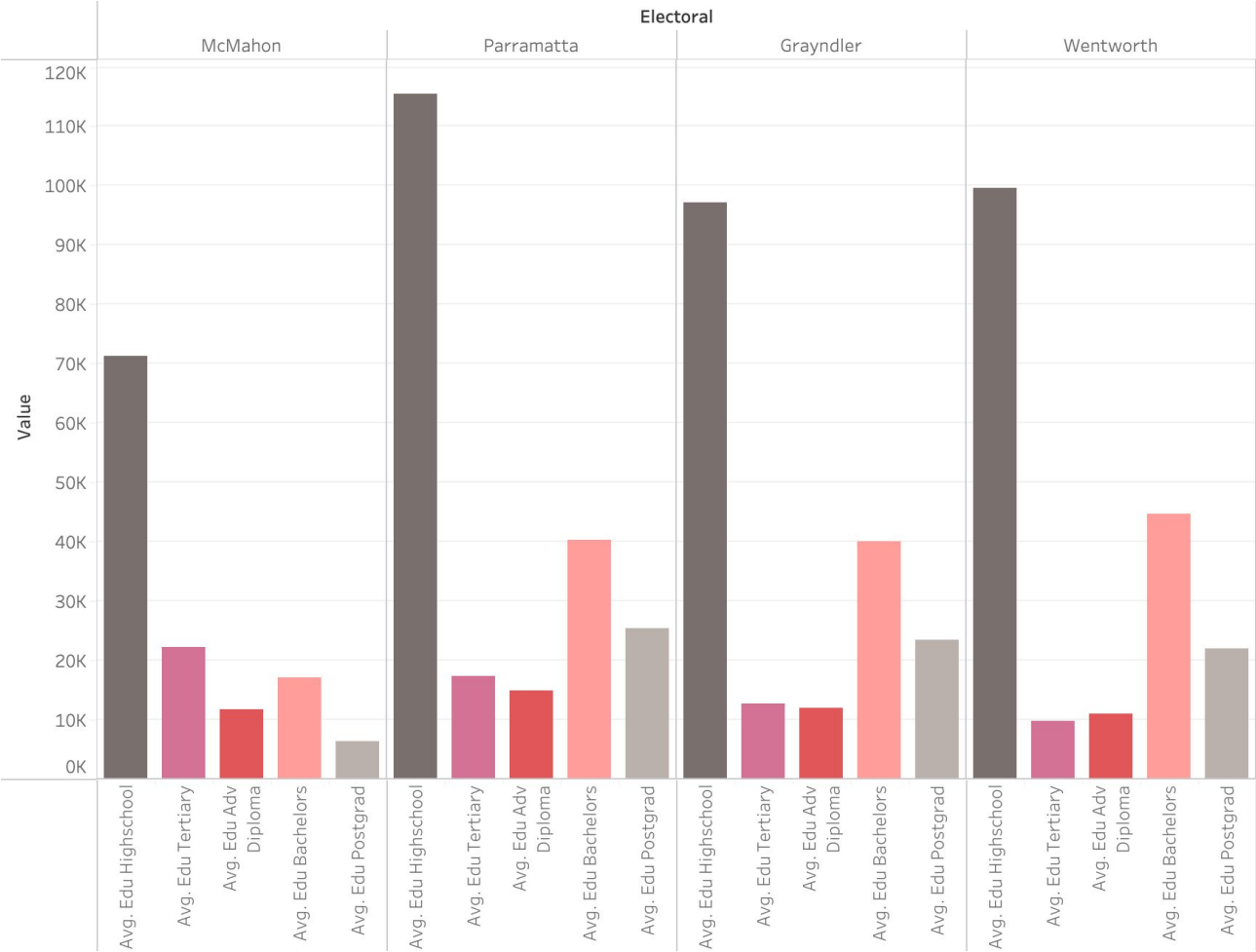
We can see that areas that has a higher cost of living have voted NO.

NSW Median Income



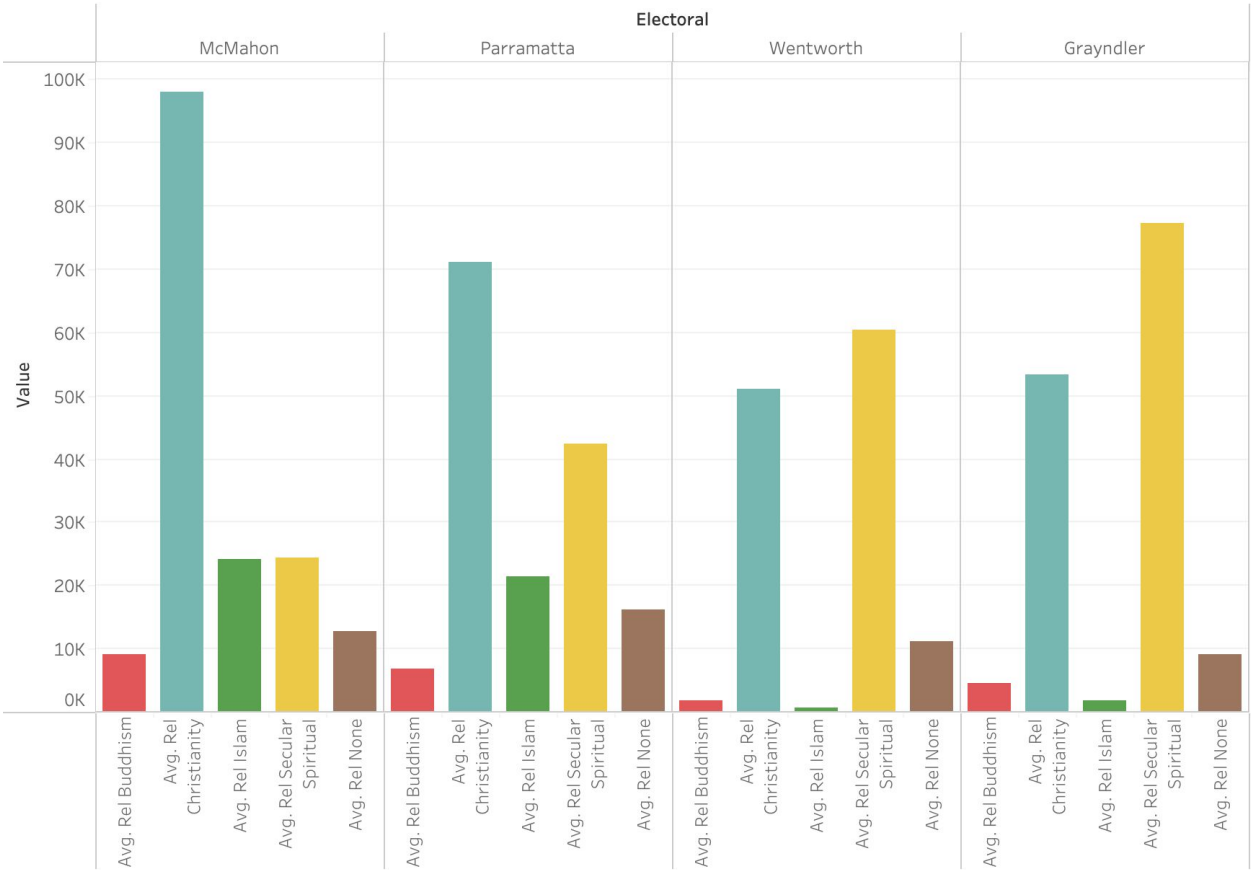
Average Education Levels

We can see that Parramatta, Grayndler and Wentworth have similar levels of education, including a high number of further education in University.



Religious Beliefs

Areas with less strong religious beliefs seems to have voted YES.



Hypothesis Testing

Established an hypothesis test to evaluate to see if areas that had above average population of people born in Australia were more likely to vote NO.

H_0 : There is no impact on the vote in areas with a higher than average population of people born in Australia.

H_1 : There is evidence to suggest there is an impact.

Results

T-statistic: 3.102054693181971

P-value: 0.0082230410899490

Assumption: We can reject the null hypothesis and say that areas with a significant amount of people born in Australia are likely to vote NO.

Correlations

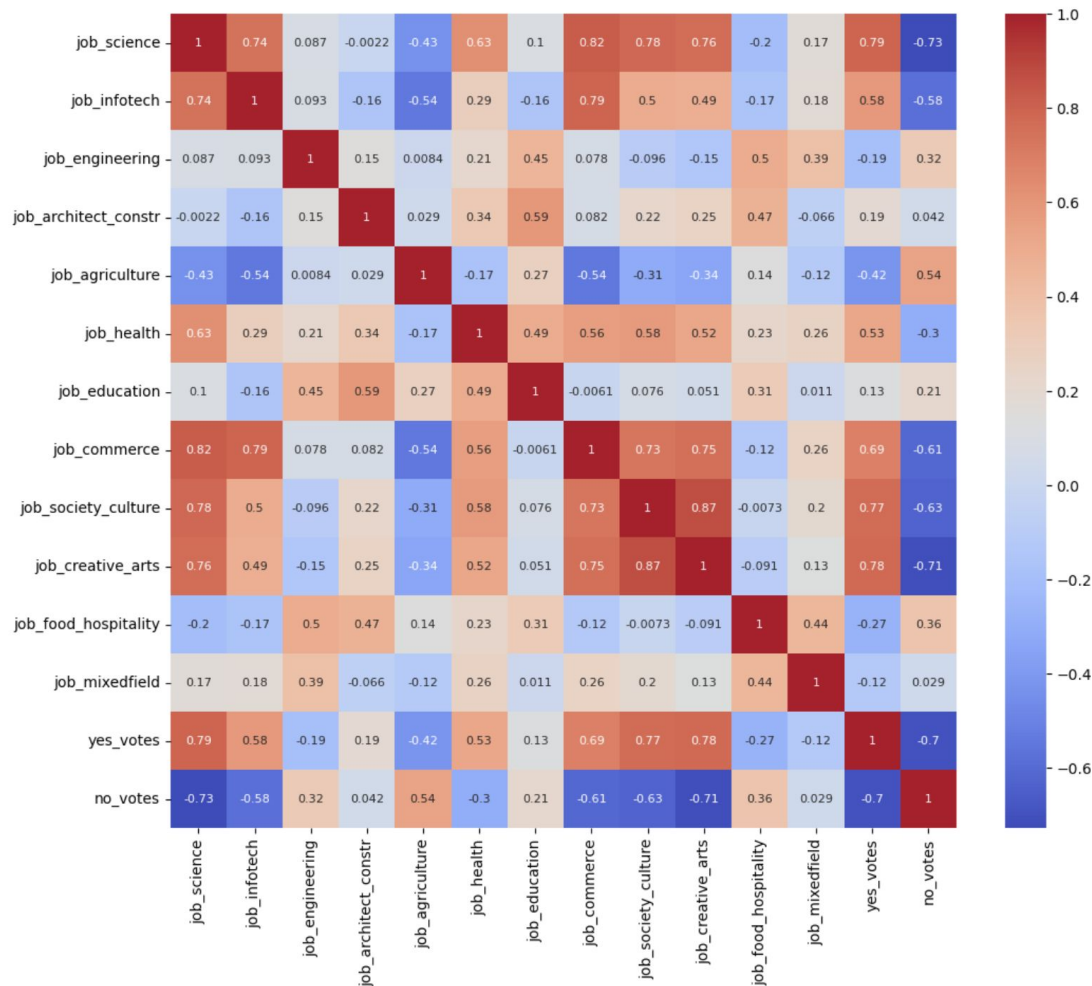
Using a correlation matrix to understand if the job industry people work in impacted the way they vote, and to understand any correlations between the larger demographic.

Job Sectors

There is a correlation between certain industries and how the people voted based on where they work.

Society, cultural and the arts are more likely to vote YES.

Agriculture and engineering are more likely to vote NO.



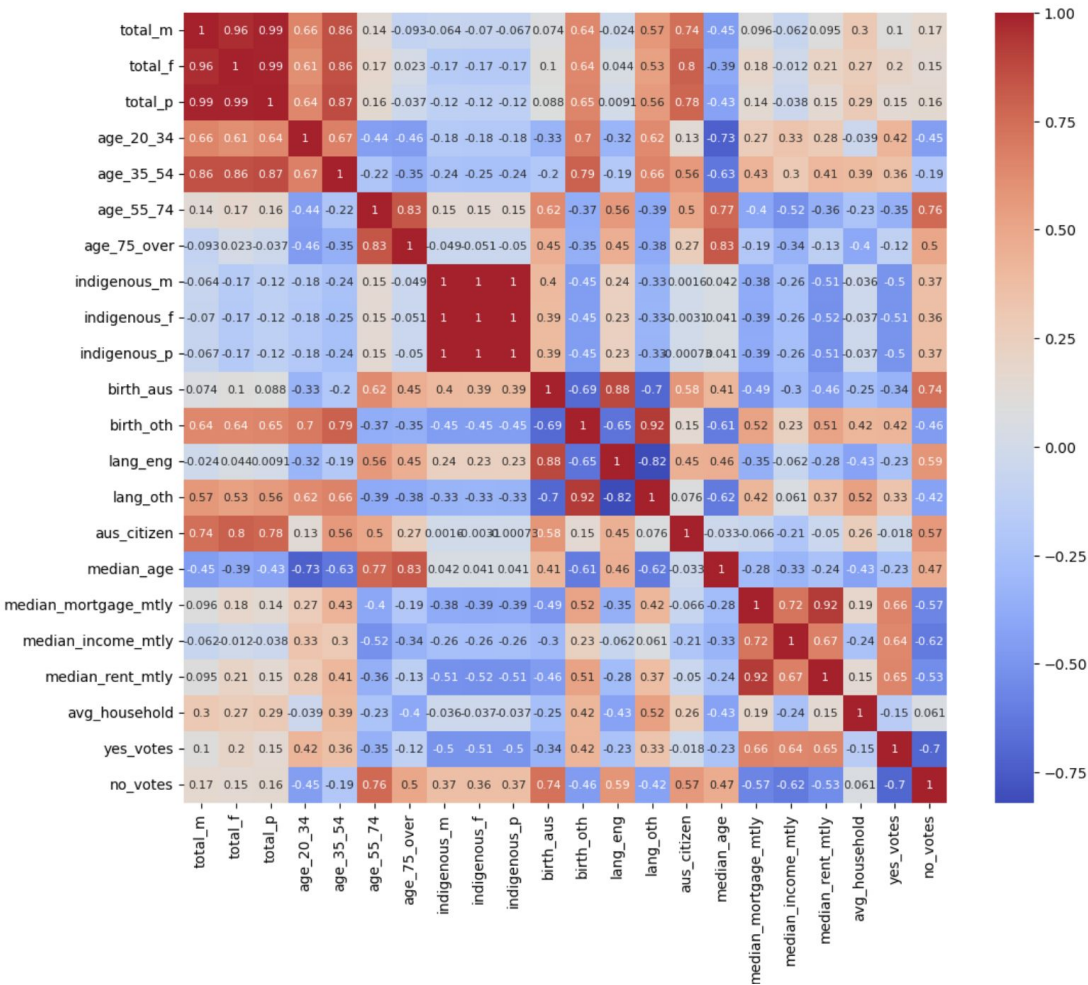
Overall Demographic

Some key findings from looking at the overall demographic:

People ages between 20 > 34 are more likely to have voted YES.

Areas with an indigenous population are more likely to have voted NO.

Areas close or higher to the median income are likely to have voted YES.



Findings

Some key learnings after this analysis:

1. Median income did have an impact on how people voted (higher above the median you are more likely to vote YES).
2. Areas with a high percentage of indigenous population are more likely to vote NO.
3. No clear evidence if education levels have an impact on how you vote.
4. Areas with an above average population born overseas is inconclusive for voter preference.

